



U3*i*

U6*i*

Precision Wire Electrical
Discharge Machine

 MAKINO



Hyper

TECHNOLOGIES

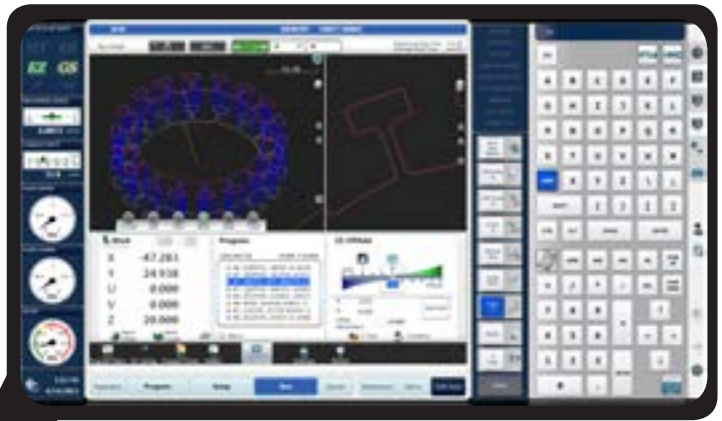
Makino's family of Hyper Technologies revolutionize the machining process in both Sinker and Wire EDM, and ensures the ideal mix of Speed, Finish, Reduced Electrode Wear or Reduced Trim Cuts, to achieve the ultimate in productivity!

The unified Hyper *i* control delivers an identical streamlined interface to both Wire and Sinker EDM operations, and provides new levels of capability, efficiency, and user friendliness.

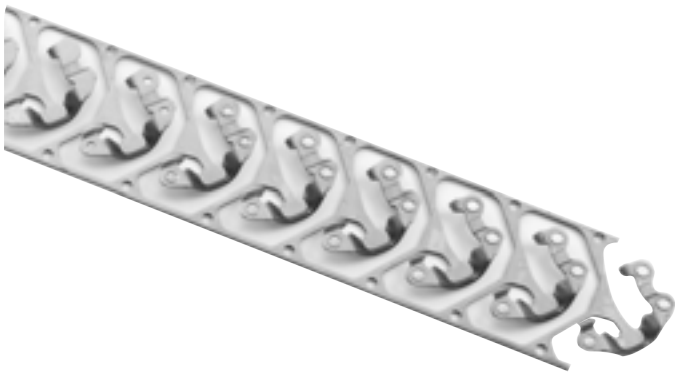
Hyper *i*

New Generation - Touch screen controller available for both Sinker and Wire EDM that makes machining easy as Ready, Set , Go!





The Hyper *i* Control improves machine productivity by intelligently streamlining the interface so that all operator skill levels can achieve the most efficient results.



Pressed Part



Pressed Part

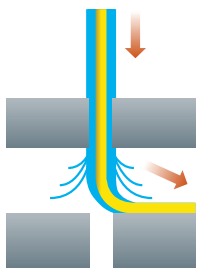
HYPER DRIVE EXTREME

New PICO Guide system that provides Jet & Jet-less AWT

Automatic wire threading

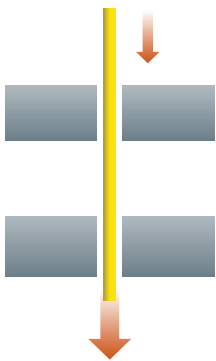
Automatic wire threading is difficult in hollow shape, slit hole, fine hole, wire break point, etc. The newly developed waterjet-less system is equipped to solve the problem.

Automatic wire threading to a hollow shaped workpiece



Water jet system

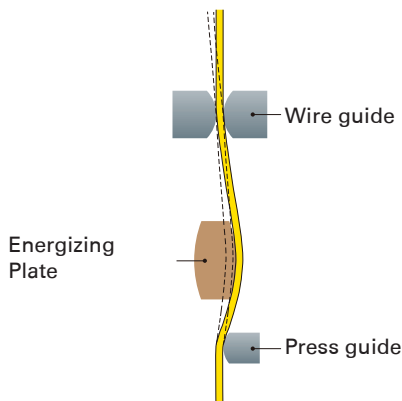
Since wire is flowed with the diffused water jet, wire will not enter the start hole.



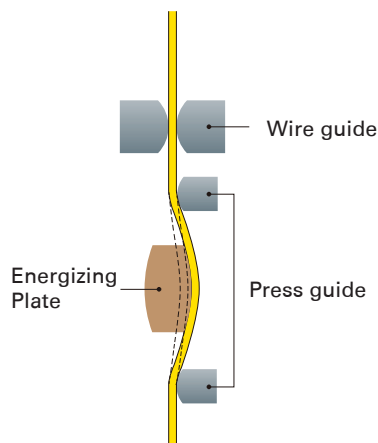
Waterjet-less

Winding wire is straightened in annealing process to go through small clearance hole. Success rate of automatic wire threading is increased.

Wire guide of competitors



MAKINO's wire guide

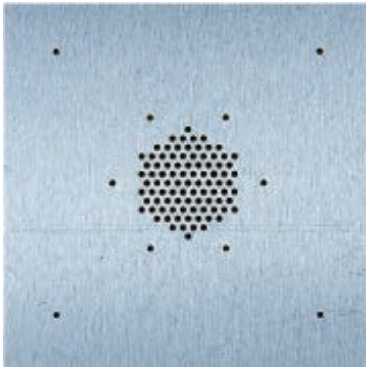


Servo motor is newly adopted to give tension to wire. There is no tension lowering for years. Calibration is not necessary.

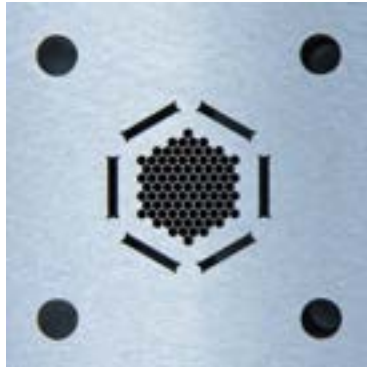
Guide system to save time and effort for wire vertical aligning

One more press guide is equipped between wire guide and energizing plate. Wire center position is kept, even when energizing plate wears. Wire vertical alignment adjusting is necessary only when new wire guide is used or regular maintenance is performed.

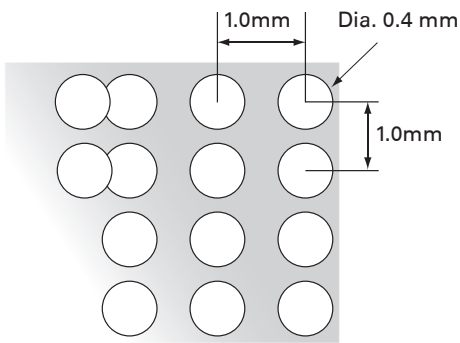
Automatic wire threading through 0.4mm diameter start holes in close proximity at a 1mm pitch.



Star Holes Before Machining



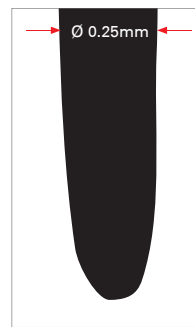
After Machining



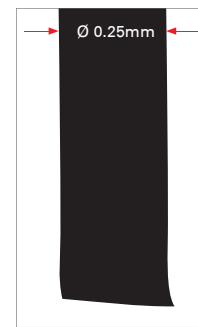
The wire is thread automatically through 0.4mm diameter start holes in close proximity at a 1mm pitch. The optimum fluid jet diameter can be selected to match the workpiece thickness and start hole diameter. Fluid jets are easy to replace and available in diameters of 0.5, 0.7 and 1.2mm

Thermal Cutter System

The new wire cutting system will cut the wire without burrs and with pointed tip which further enhances the reliability of Automatic Wire Threading. It works on all range of wire.



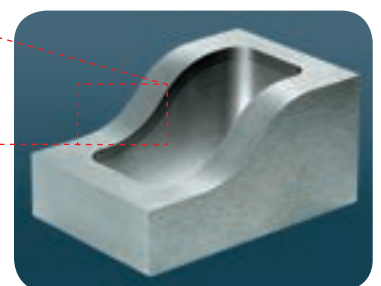
Wire Tip after Thermal Cutter



Wire Tip after Normal Cutter

Micro taper machining

The PICO guide system facilitates high-accuracy machining of micro tapers. This new guide system, combined with precise servo control, produces uniform machining along the entire length of the cut detail.

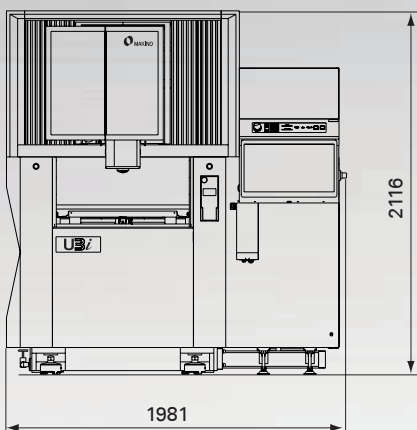


Workpiece Material: S55C (tool steel)
 Wire Used: Dia. 0.2mm Hard Brass
 Process: 3 Pass Machining
 Operation: 4-Axis Machining of Trim Die
 Geometry: 2.0mm Straight Land with
 1° Back Taper Relief over
 3D Contour

U3i



Compact design



		U3i
Axis travels (X x Y x Z)	mm	370 x 270 x 220
Axis travels (U x V)	mm	±50 x ±50
Maximum workpiece size (L x W x H)	mm	770 x 590 x 220
Maximum dielectric fluid height	mm	260
Maximum workpiece weight	kg	600
Height to table surface	mm	950
Machine Weight	kg	3300
Wire electrode diameter	mm	0.07, 0.1, 0.15, 0.2, 0.25, 0.3

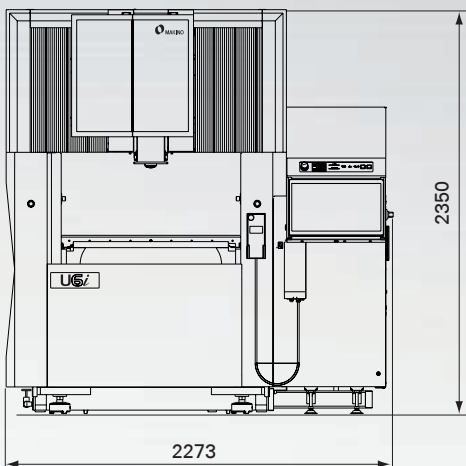
U6i



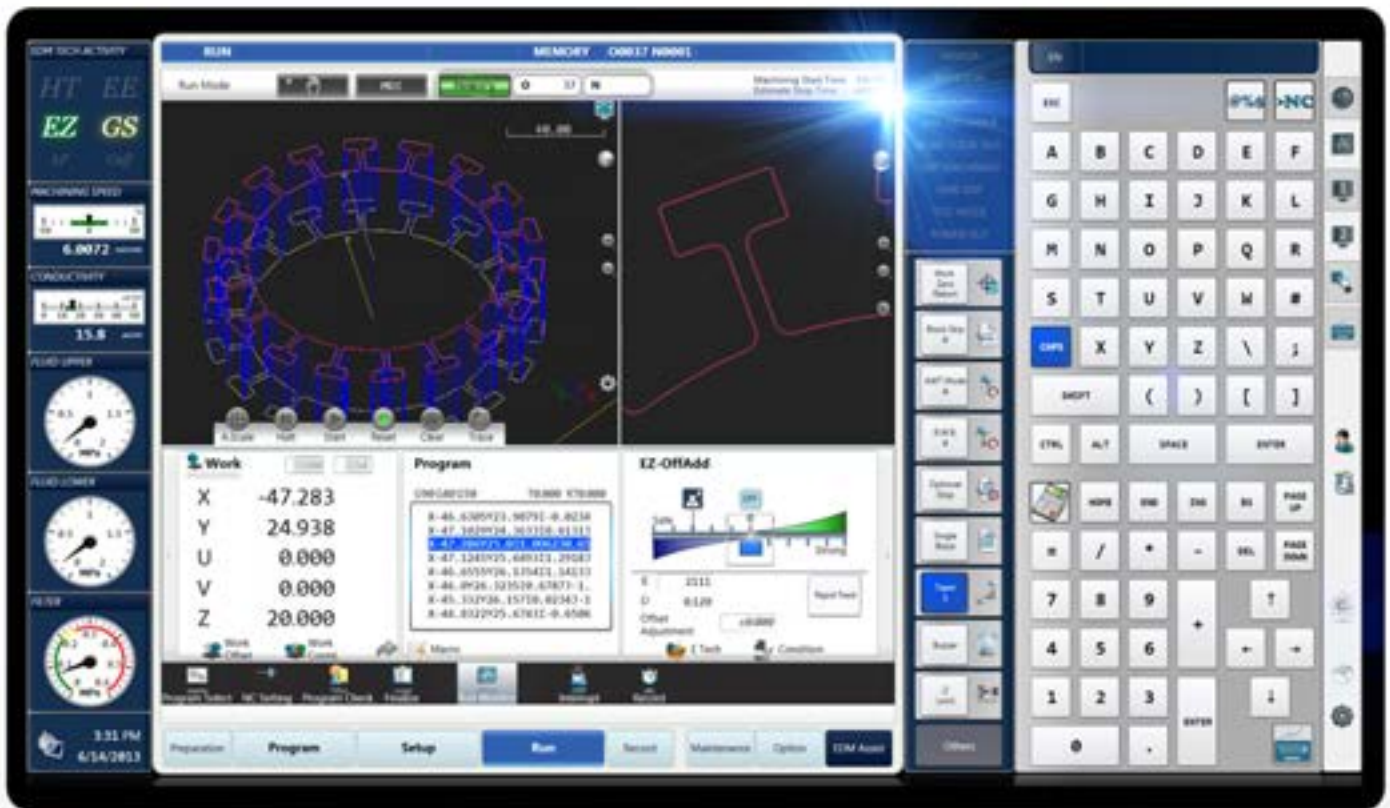
Machine on the picture,
including options

*Additional 2nd screen,
keyboard and mouse are
optional

Compact design



		U6i
Axis travels (X x Y x Z)	mm	650 x 450 x 420
Axis travels (U x V)	mm	±75 x ±75
Maximum workpiece size (L x W x H)	mm	1000 x 800 x 400
Maximum dielectric fluid height	mm	455
Maximum workpiece weight	kg	1500
Height to table surface	mm	1000
Machine Weight	kg	5300
Wire electrode diameter	mm	0.07, 0.1, 0.15, 0.2, 0.25, 0.3



*i*ntuitive | *i*ntelligent | *i*nteractive

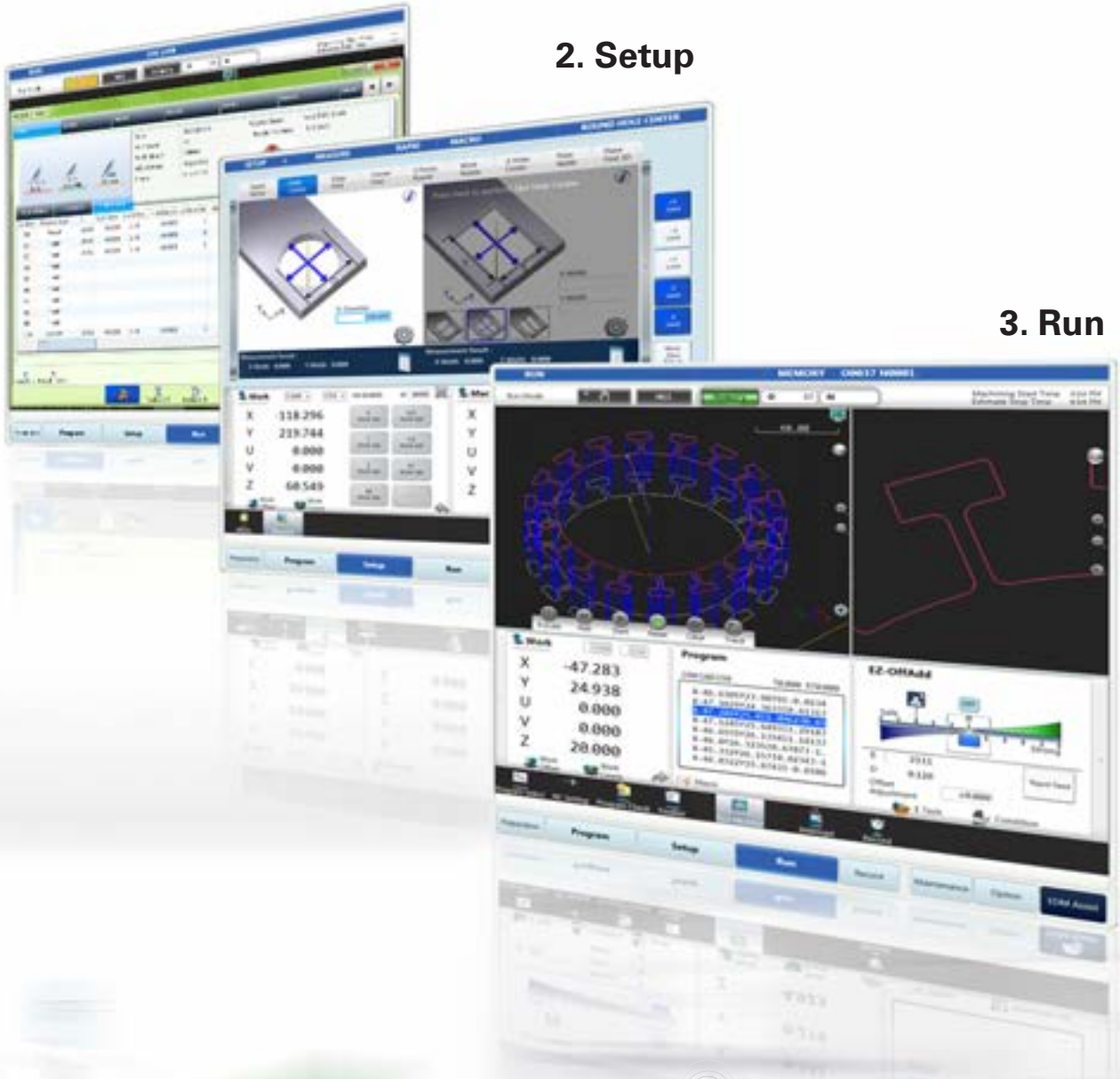
Makino's new **Hyper *i*** control revolutionizes the interface between the operator and the machine. Using the most current interface technologies used by SmartPhones and Tablets, Makino's Hyper *i* Control makes use of Pinch, Swipe and Spread functions that provide the operator with a simple and natural feel that is comfortable and extremely efficient. The user friendliness of the Hyper *i* Control is further enhanced with the integration of on-board digital manuals, intelligent help functions, and e-Learning training system.

Any operator with a basic knowledge of machining can learn Makino's Hyper *i* Control. Operators quickly learn and appreciate the technology and power that the Hyper *i* Control provides, and most operators are able to produce sophisticated part details on the first day of installation. Hyper *i* brings a completely new level of user-friendliness, operator comfort, and efficiency to the shop floor.

1. Program

2. Setup

3. Run



Gesture Control is the natural way to interact with the machine

PINCH



TOUCH

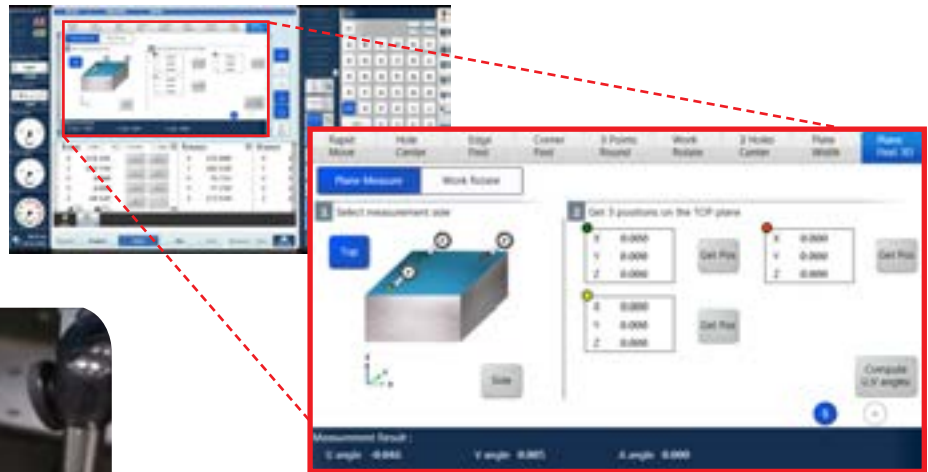
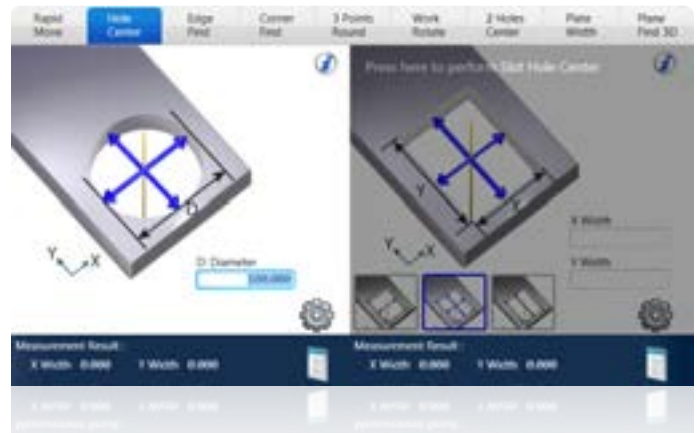


SWIPE



Setup Function

Provides the operator with an easy and streamlined method for aligning the wire to the work piece. There are multiple standard Pick-Up cycles that help reduce setup time

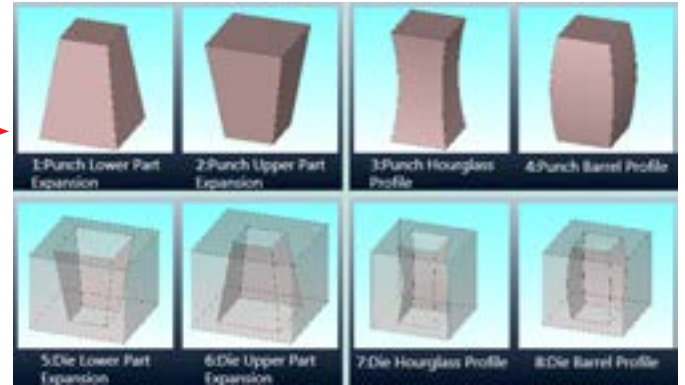
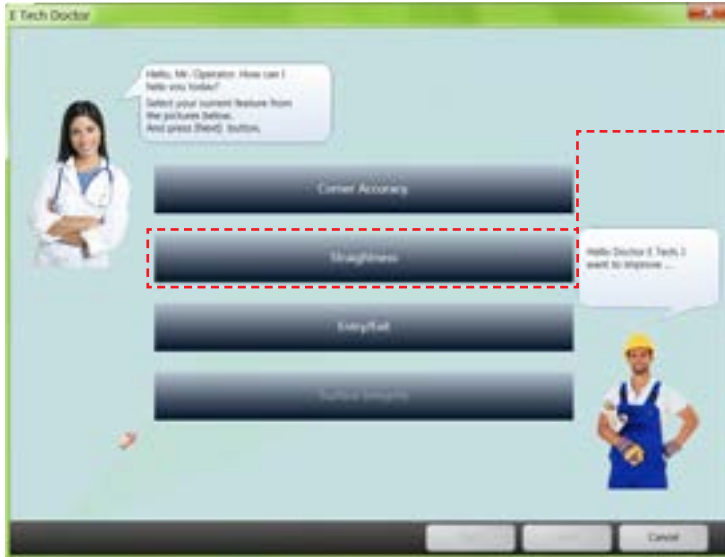


3D Plane Find Function

Save valuable time by eliminating the need for manual part leveling of the work piece using the 3D Plane Find function. The function is used to capture and record 3 points using a DialTest Indicator and then calculates and aligns the U/V axes plane so that it is skewed to be perpendicular with the work piece.

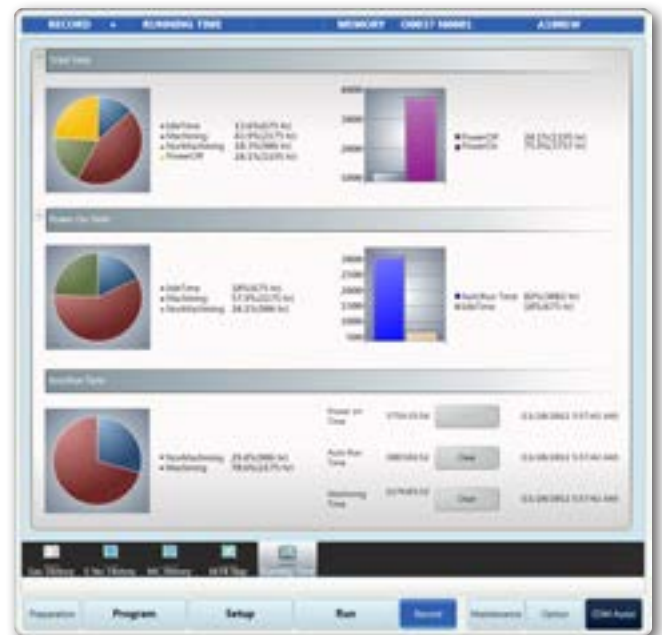
E-Tech Doctor

The E-Tech Doctor is an advanced intelligent help function that provides a method of adjusting machining conditions to achieve your perfect part! The revolutionary interface combines the knowledge and experience of an advanced operator into a easy to use graphical menu.



Supportive Tools

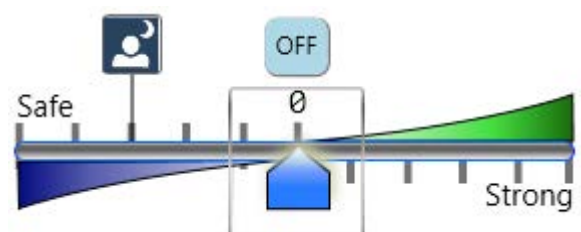
The many additional functions incorporated into the Hyper i control are designed to improve user-friendliness and productivity. An Estimate function provides Cycle Time and Cost estimates while also monitoring the condition of consumables items. A Record page tracks and reports on machine utilization, which provides a valuable tool in identifying areas for operational improvements.



EZ-Cut Function

The EZ-Cut slider bar provides both novice and experienced operators with a convenient tool to raise or lower the machining speed using a simple slide bar interface. This function will automatically adjust several power setting elements in real-time, and is effective in reducing cycle time or improving process stability.

EZ-OffAdd



SOLUTIONS FOR PREMIUM INDUSTRY

The Makino *U_i* Series will provide a Universal approach to a wide range of premium applications sure to address the most demanding needs of precision stamping, Job Shop and Medical industries.



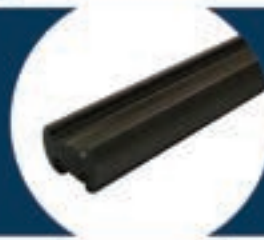
Stamping Die Punch

- ▶ Tool Steel, 30mm thick
- ▶ Machine extremely fine details with wire dia. 0.07mm with surface finish of 1.5 μmRz (0.19 μmRa)



Stamping Die Punch

- ▶ Carbide (G3) , 100mm thick
- ▶ To address all requirements a wide range of machining conditions are available as standard Fine surface finish of 1 μmRz (0.14 μmRa) is achieved in just 5 cuts



Stamping Die Plate

- ▶ Tool Steel, 20mm thick
- ▶ Makino Pico guides cut small Micro tapers with the highest possible accuracies and ensure successful wire threading into small holes.



Production of Gear

- ▶ 420 Stainless Steel , 50mm thick
- ▶ H.E.A.T. Technology provide outstanding high-speed machining of 128 mm^2/min in the most difficult flushing conditions with nozzles detached from the work piece.
- ▶ Surface finish down to 4.8 μmRz (0.6 μmRa) is achieved in just 3 passes



Medical Surgical Tool

- ▶ Tool Steel (2.3mm Dia.)
- ▶ Machine extremely fine details with wire dia. 0.1mm and Wire EDM Turning at 800rpm



Medical Implant: Staple Production

- ▶ Titanium Alloy - 6Al4V, 9mm thick
- ▶ Parts Production using dia. 0.100mm Brass Wire and a rotary table
- ▶ Minimal recast layer and without any "Bluing" effect
- ▶ Machining time: 5min 30 sec per part (when machining 40 parts)



HyperCut

HyperCut Technology addresses the demanding need to deliver a superior surface finish while reducing trim cuts.

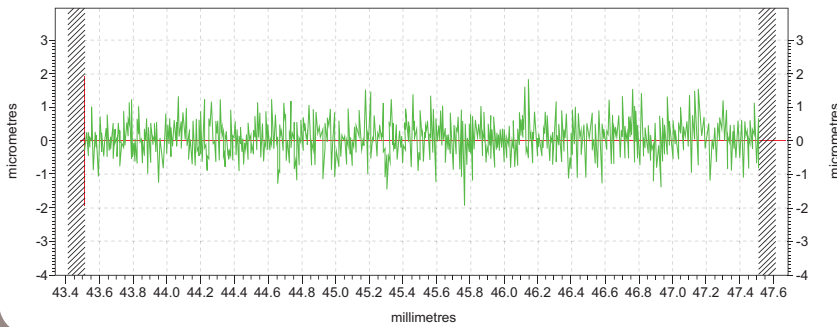
HyperCut was specifically developed for the precision stamping die building industry.

Competitive results are achieved in a wide range of applications using different wire type, wire size diameters, workpiece thickness and materials.

0.4µm Ra/3 Pass Machining on Steel



Analysis - R/5x0.8mm/G/300/LS Line

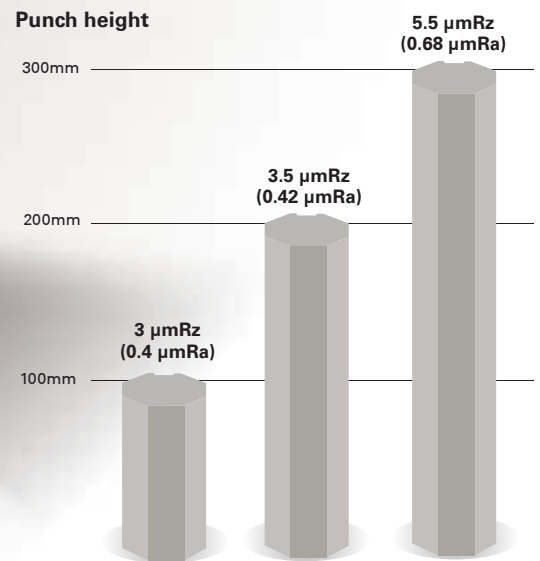


Workpiece Material: Steel (SKD-11)
 Wire Used: 0.25mm dia. Brass Wire
 Material Thickness: 80mm
 Surface Finish: 0.4 µmRa

Surface finish down to 0.34 µmRa can be realized as well using only 4 Pass Machining (Steel, 80mm Thick).



Superior surface finishing even in the tallest workpiece applications



Surface finishing with just 3 cuts machining: Steel

CRYSTAL MACHINING



Crystal machining circuit for best surface finish

This feature is highly effective solution for machining shapes that are hard to polish. It enhances the best surface finish of parts for improves mold release performance. Crystal machining requires no special insulated jigs and is performed with ordinary brass wire.

Material (t=20mm)	With Crystal Machining
Steel	0.14 μmRa
Tungtsen Carbide (Carbide Grade G5)	0.08 μmRa

(Actual measured values when using crystal machining circuit)

2,5 μmRz /3 Pass Machining on Carbide (G3)

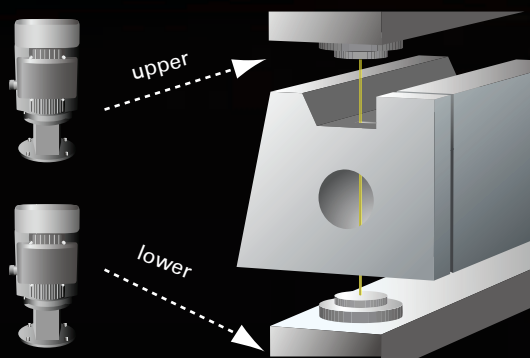
Material Thickness: 100mm



H.E.A.T. (HIGH ENERGY APPLIED TECHNOLOGY)

Fastest both nozzle away machining in the world

In EDM, the most difficult cuts are when the nozzles are detached from the workpiece. Makino **H.E.A.T.** Technology uses a combination of flushing enhancements and special generator upgrades that greatly increase cutting speed. As a result, Makino H.E.A.T. Technology delivers a part to the customer with minimal operator intervention, fast, accurate and with superior surface finishes. This combination is unmatched in the EDM industry.

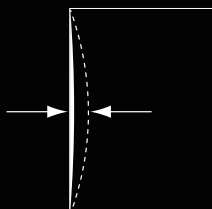


H.E.A.T. Technologies unique flushing capability is a result of our High Capacity Digitally Controlled Dual Flushing pumps.




Workpiece material : S55C (steel)
 Wire used : Dia. 0.25 mm Brass wire
 Plate thickness: 150 mm
 No. of passes: 1
 Machining nozzle position: Top and bottom separated by 8 mm
 Machining length: 353.8 mm

Straightness Improved by **58%**
 12 μ m \rightarrow 5 μ m on one side

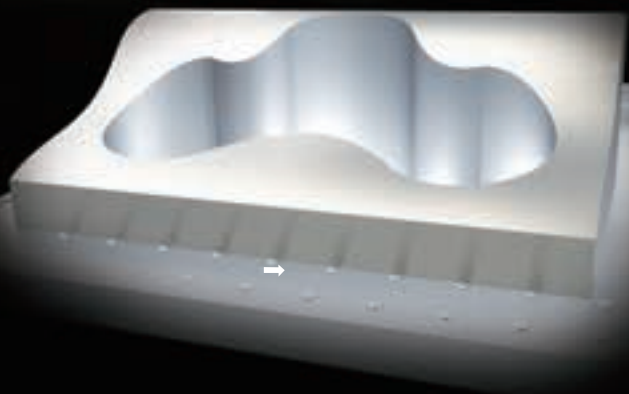


Machining speeds improved by **75%**
 49.5 mm² / min \rightarrow 87.0 mm² / min

Machining time reduced by **43%**
 17 hr. 52 min. \rightarrow 10 hr. 10 min



Plastic injection cavity
for car dashboard



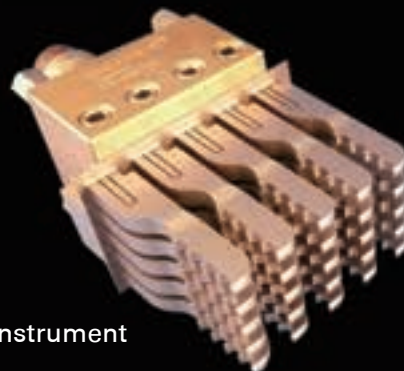
Die cast insert
(outside cut profile WEDM)



Mechanical
Component



Medical Instrument



H.E.A.T. 3pass machining

Surfaces finishes down to Rz 5 μ m can be achieved using just three passes using H.E.A.T. Technology.

Workpiece material:	STAVAX (stainless steel)
Wire used:	Dia. 0.25 mm (BS)
Plate thickness:	60~100 mm
No. of machining passes:	3
Machining speed:	1st 1.9-1.3 mm / min 2nd 7.8 mm / min 3rd 8 mm / min
Surface finish:	Ra 0.68 μ m

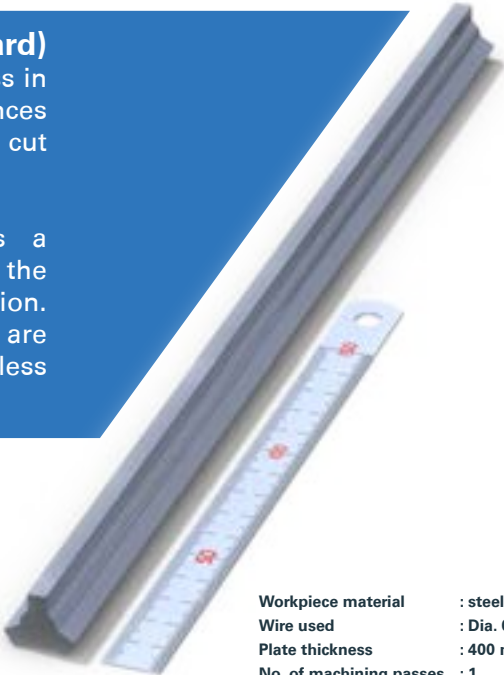


GS-Cut (BellyWIZARD)

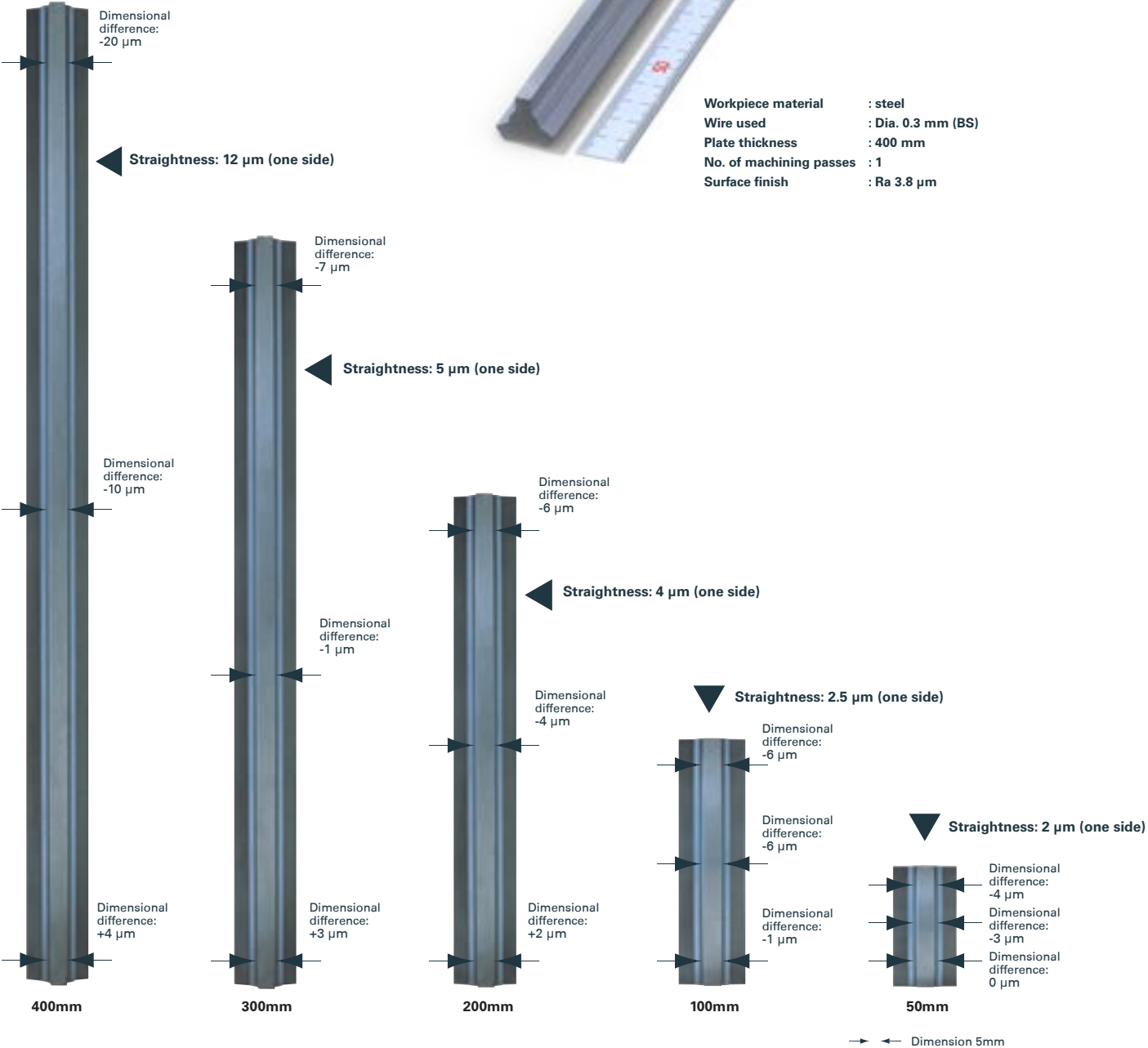
Incredible straightness

Makino's proven technology **GS-Cut (Belly Wizard)** incorporates a unique approach to part straightness in the tallest workpiece applications. Achieving tolerances of 5 μm over 300mm are realized using only one cut using Makino's Belly Wizard Technology.

This efficiency-enhancing technology produces a straighter and more accurate work piece during the Rough Cut while also reducing wire consumption. From this improved precision, Finishing Passes are also faster and more accurate by having to remove less material and error from the final work piece.



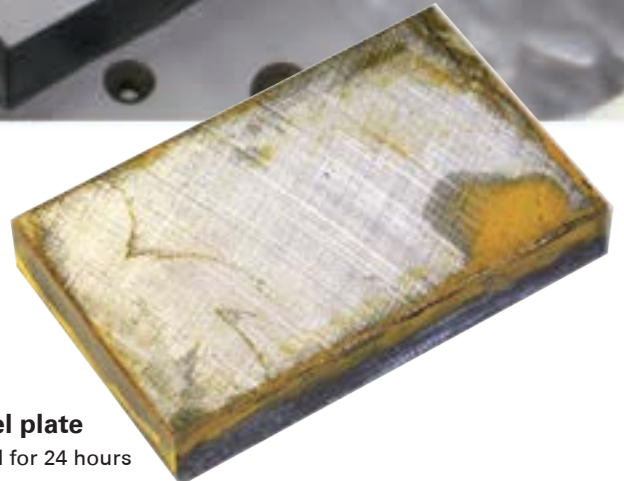
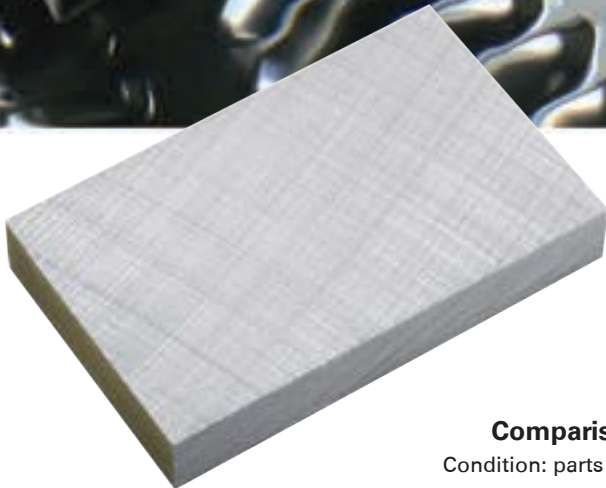
Workpiece material : steel
 Wire used : Dia. 0.3 mm (BS)
 Plate thickness : 400 mm
 No. of machining passes : 1
 Surface finish : Ra 3.8 μm



ProTech (OPTIONAL)

ProTech Technology is a proprietary enhancement to the U series that protect the work piece against rust. No need for harmful additives that may effect resin life as well as unpleasant side effects.

Benefits are effective on several kind of materials such Steel, Carbide and Aluminum

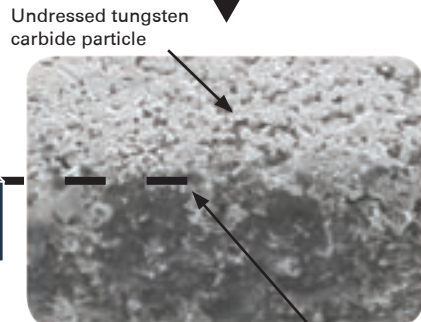
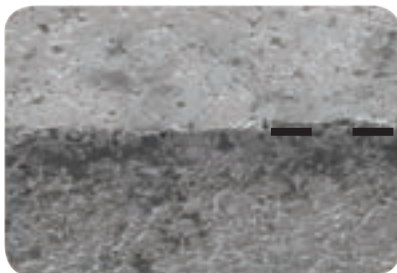


Comparison of a Steel plate

Condition: parts are submerged for 24 hours
Water conductivity: 15 $\mu\text{S} / \text{cm}$
Material: Steel S55C

With ProTech

Without ProTech



Undressed tungsten carbide particle

No fine edge

Comparison of a Tungsten Carbide

Condition: parts are submerged for 24 hours
Water conductivity: 15 $\mu\text{S} / \text{cm}$

LOW WIRE CONSUMPTION

Cut Fast, Cut Accurate, and Save Money!

The biggest expense in operating a Wire EDM machine is the consumed wire, and Makino has been the industry leader in low wire consumption technologies. There are no special settings or "part-time" buttons an operator has to enable to save on wire costs; every cutting condition, including sealed and poor flush applications, is automatically optimized and designed from the ground-up on the Makino for low wire consumption. Optimum Machining Performance is the ideal mix of Machining Speed, Part Accuracy, and Wire Consumption for the best combined efficiency, throughput, and cost. Only Makino can provide all 3 for every condition and application!



Up to 60% savings in wire costs

**Competitor's
Wire Usage
136 Spools**



**Makino's
Wire Usage
45 spools**



**Amount of 10kg spools needed
for 2000 machining hours**

MAINTENANCE

Filter change is a breeze

The main di-electric filters are conveniently located in a non-submerged cabinet that allows for fast and simple replacement. To make filter replacement easier and safer, an integrated Filter Air Purge system is used to drain excess water from the filters. Operators will find this feature extremely helpful as it will make handling the filters much less weight intensive, and it also minimizes the water and slip hazards on the floor that are common during filter replacement.

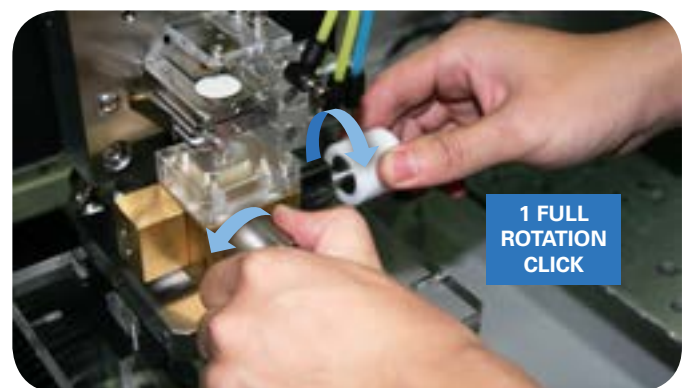
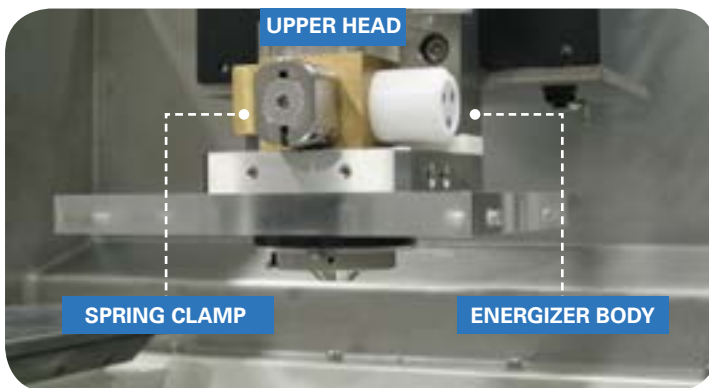


Air is blown by pressing the button and evacuates water captured inside the filter.



Maintenance of the Energizing plate

The Energizer Plates are easily accessed on the Upper and Lower machine heads, and the design minimizes maintenance requirements. The PICO Guide system features a tool-less Energizer Indexing system that simplifies index positioning with on one rotation / "one-click" design that saves time and eliminates error or the need for cumbersome measuring devices.



Guide Cleaning



After sludge Removal



Removal of sludge

As a result of our Pico Guide being a closed round system, sludge can become an issue for maintenance. Makino has developed a special twin jet system that aids in the continuous removal of sludge each and every time a thread occurs. This design extends the guide maintenance interval, and provides greater machine reliability.



The seal plate

The seal plate (X-axis) is kept clean by blowing water constantly. Machining chips are flushed away. Machine remains in good condition for long.



Consumable monitoring by Hyper i

Dedicated Maintenance screens provide the operator with convenient access to consumable item status, part descriptions, and maintenance procedures. Hyper-links to the on-board digital manuals and embedded videos provide enhanced training and support to the operator for machine maintenance.

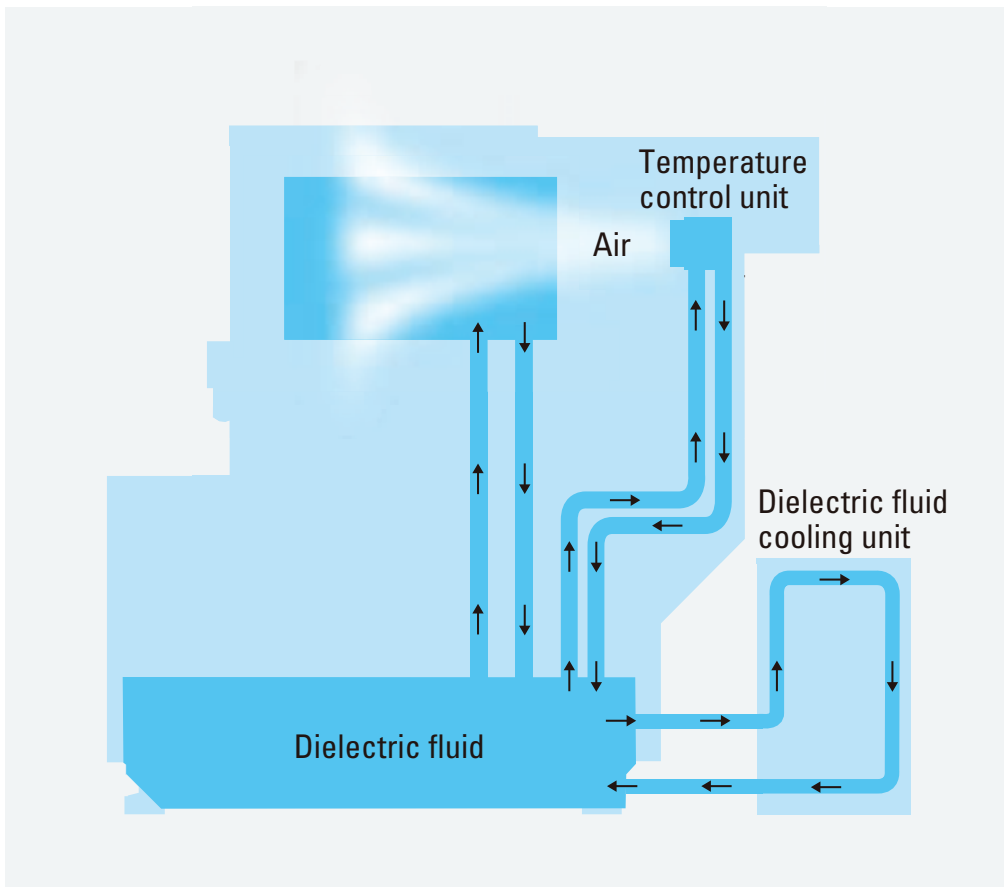
No.	Check Item	Status	Check Day	Next Check Day	Comment
1	Inserting clutch roller (2-shaft)	Check	9/2/2013	9/2/2013	last repl. Sep2012
2	Adjusting tension of powder clutch	Check	9/2/2013	9/2/2013	
3	Cleaning a bit of wire guide with solvent	Check	9/2/2013	9/2/2013	
4	Cleaning the upper insert guide	Check	9/2/2013	9/2/2013	last repl. Aug2013
5	Wire vertical alignment	Check	9/2/2013	9/2/2013	1st+2nd. 9' Sun
6	Cleaning inside of clean tank and dirty tank	Check	9/2/2013	9/2/2013	OP 10% to change
7	Cleaning the float switches & Level Sensor Port	Check	9/2/2013	9/2/2013	
8	User Check 5	Check			
9	User Check 6	Check			



FURTHER PURSUIT OF ENHANCED USABILITY

Machine temperature control for high accuracy

The interior of the machine is kept to the same temperature as the dielectric fluid, which is controlled by the dielectric fluid cooling unit. This reduces thermal distortion of cast iron machine components to provide high-accuracy machining. Moreover, the dielectric fluid cooling unit incorporates an inverter system to minimize the temperature difference between its On/Off states. The temperature is controlled with high accuracy to within $\pm 0.1^\circ\text{C}$.



0.05 μm scale feedback

The XY axes are fitted with a 0.05 μm scale feedback system for high-accuracy pitch machining.

EASY OPERATION

Intermediate Door

A unique door system (only available on the U6i) allows door operation to an intermediate level for convenient viewing and access to the workpiece.

Portable multifunction control panel

Makino provides “as standard” a multi-function Handbox with digital readout. This advanced and portable hand box offers a wide range of features that provide operators with convenient and time-saving functions during set up and operation of the machine.



Load workpiece with crane

The machine head can be moved to provide minimal obstructions when loading a large work piece by overhead crane.

Accessibility

The automated front Drop Door design allows easy loading / unloading of large work piece's on the table. The drop door also travels below the work table level, allowing for excellent access underneath the work table for maintenance and machine operation purposes. Additionally, operators can use mechanical work holding lifters directly in front of the machine.



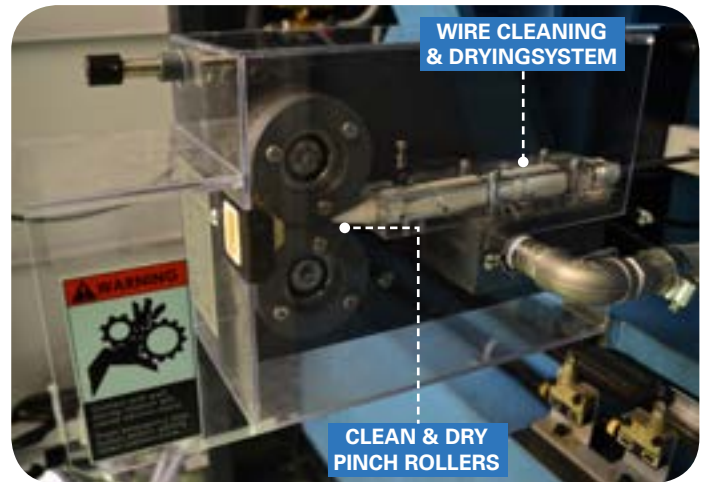
Wire disposal box with wheels

The need for a Wire Chopping Unit is eliminated as a result of Makino's unique Wire Cleaning and Wire Drying system. The wire coils up neatly and cleanly in the wire collection bin as a result of being completely dry before passing through the pinch rollers, and this design reduces maintenance requirements while boosting machine reliability. The large capacity wire collection bin allows easy removal of spent wire, and is mounted on wheels for effortless movement.

EASY OPERATION

Long-Life Pinch Rollers

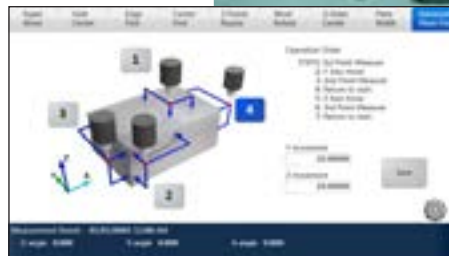
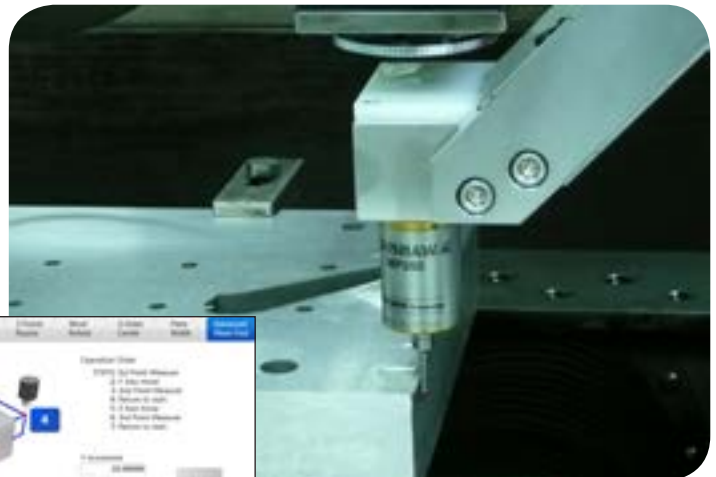
The design of Makino's Wire Retrieval system reduces maintenance requirements while extending the life of consumable wear items. The wire is cleaned and then dried before passing through the precision rollers. This eliminates the introduction of abrasive debris and water to the roller and bearing system, and prevents wire slippage across the rollers. The design provides reliable operation that delivers clean spent wire that lays flat in the wire basket. The combined system eliminates the needs for a Wire Chopper, making it the most reliable, longest lasting and trouble free Wire Retrieval system in the industry!



Productivity Enhancing (option)

3D Setup Probe system

An available 3D Probe system helps boost productivity by further reducing setup time. The system utilizes a high accuracy Renishaw probe that can establish work piece locations and 3D Leveling of the work piece. The 3D Probe system can also be configured to support setup of NC Rotary Table applications for Cutting Tool manufacturing



Large Capacity Wire Spool (option)

The standard machine configuration accepts up to a 10kg wire spool. To extend unattended machine capability, there are two large spool options available. The 16kg wire spool option upgrades the standard machine configuration to accommodate larger capacity spools on the existing wire drive system. The 20kg wire spool option adds an external cabinet to the left-side of the machine that provides higher capacity with a more ergonomic and operator friendly system for utilizing heavier wire spools.



HyperConnect (option)

HyperConnect is a bidirectional remote connection that enables operator to access either the machine control from a remote device and as well a PC from the machine controller.



OPC-UA/MT Connect Connectivity (option)

Provide job status and related information such as machining speed, completion time and time to next stop point. Critical status and alarms are illustrated in detailed to indicate why machine is (NOT) performing as expected.



2nd Display Screen (option)

A 2nd 24" HD display touch screen for the Hyper i control is available to aid in operator convenience. The 2nd screen is commonly used when integrating the WIZ software on the machine, as this allows the operator to still monitor the machine screens while preparing and programming the next job.

The Hyper i control also further supports the dual display configuration to boost multi-tasking. Operators have the ability to change and configure what machine screen or data is displayed on the 2nd screen, which allows customization and placement of data where it is needed.



Machine Specifications

		U3i	U6i
Travels (X x Y x Z axes)	mm	370 x 270 x 220	0 x 450 x 420
Travels (U x V axes)	mm	±50 x ±50	±75 x ±75 (with limitation)
Table Working Area	mm	630 x 450 (SQUARE) 630 x 460 (U SHAPE)	910 x 710 (SQUARE) 910 x 710 (U SHAPE)
Maximum Workpiece size	mm	770 x 590 x 220	1000 x 800 x 400
Maximum Dielectric Fluid Height	mm	255	455
Maximum Workpiece Weight	kg	600	1500
Height of Table Surface	mm	950	1000
Wire Electrode Diameter	mm	Ø 0.07, 0.1, 0.15, 0.2, 0.25, 0.3	Ø 0.07, 0.1, 0.15, 0.2, 0.25, 0.3
Maximum Taper Angle		±15° / 100mm, Ø0.2 above *1	±15° / 100mm, Ø0.2 above *1
Dielectric Fluid Tank Capacity	L	590	920
Deionizing Resin		20-liter pack	20-liter pack
Dielectric Fluid Filters		4	4
Machine Dimensions (W x D x H)	mm	1981 x 2653 x 2116*2	2273 x 3308 x 2350*2
Floor Space (W x D)	mm	2580 x 3650	2700 x 4310
Machine Weight	kg	3300	5300

*1 In the case of PICO precision guide system, MEGACUT-A wire is required for taper machining larger than 10°. And Machinable taper angle larger than 2° is limited according to jet nozzle diameter.

*2 When opening filter case door, Machine height is 2440 mm.

Item	Specification
Circuit Type	Transistor Pulse Circuit
Maximum Machining Current	30 A
Current Settings	128 levels
Voltage Settings	35 levels
Off Intervals	256 levels
Automatic Voltage Regulator	Standard
Cooling System	Forced Air Cooling
LL Generator Circuit	Standard

Jet nozzle diameter and start hole diameter (for machining with nozzle contact)

Plate thickness	Start hole (mm)	Start hole (mm)													
		0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	
0 - 30															
30 - 50															
50 - 100															
100 - 200															

Ø1.2mm Jet

Ø0.7mm Jet

Ø0.5mm Jet

Jetless

Note 1 Jetless: Wire electrode dia. Ø0.15mm or more (Wire electrode dia. Ø0.1mm or less: Wire thread probability decreases)
Note 2 Minimum start hole diameter of jetless Wire electrode dia. Ø0.1mm or more: Wire electrode dia. Ø+0.1mm Wire electrode diameter less than 0.1mm : 0.2mm

Standard Specifications

- H.E.A.T.
- 0.05 µm Scale Feedback (X,Y axes)
- 4 Filters unit
- Crystal machining
- Auto Greasing Supply Device
- Seal Plate Shower
- Radiator (inside the casting area)
- Cross Bar Support
- Seal Plate Shower
- Submerged Machining Specifications
- PICO Jetless Precision guide system
- SQUARE Shape WorkTable
- Automatic Water Level Setting
- Automatic Wire Threading Unit
- Fine-hole Automatic Wire Threading Unit
- Jet Nozzle (Dia Ø1.2mm)
- Dielectric Fluid Cooling Unit, fine resolution
- Large Capacity Wire Spool (16 kg)
- Power Supply Line Filter
- Portable Multifunction Control Panel FPB2
- Ethernet 10/100BASE-TX
- USB Flash Memory Interface
- Program Storage 10GB
- Dielectric filter air purge
- Anti Virus

Standard Specifications

- Workpiece Washing Gun
- ProTech
- Vertical & Taper Calibration jig
- Hyperconnect (Includes EDM Mail)
- Wire box with wheels
- CNC Controller - Hyper i
- Large Full HD Multi-touch screen
- EDM Explorer
- Network connection - Ethernet 1000 BASE-T / 100 BASE-TX / 10 BASE-T

Optional Specifications

Machine

- Special Hardening WorkTable (Square Shape)
- 0.05 µm Scale Feedback (X,Y,U,V axes)
- Special Customer-specified Machine Colors
- Angle Cut Set (Dia Ø0.2mm, Ø0.25mm)

Optional Equipment

Machine

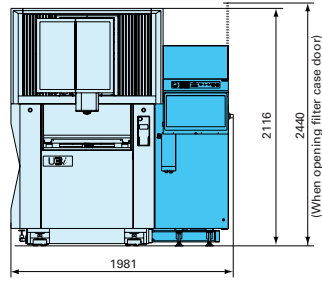
- ◆ Large capacity Wire Spool Loader (20 kg or 30 kg)
- ◆ Jet Nozzle (Dia Ø0.5mm, Ø0.7mm)
- ◆ Workpiece Clamp Set
- ◆ Automatic Water Supply Unit
- ◆ Maintenance Set
- ◆ Running Kit
- ◆ Work Light
- ◆ Keyboard and mouse with 2nd Display Screen
- ◆ 3D Setup Probe System

Control System

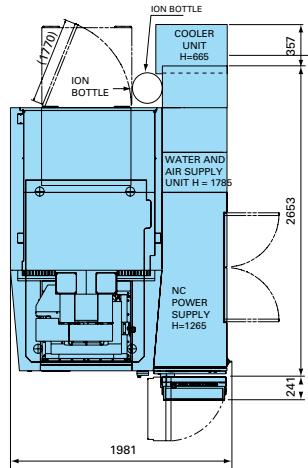
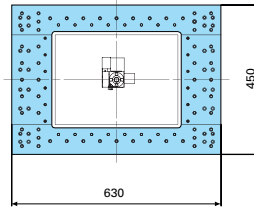
- ◆ Alarm Signal Tower (1, 3 lamps)
- ◆ Operated Circuit Breakers
- ◆ OPC-UA
- ◆ MT connect interface

Machine Layout

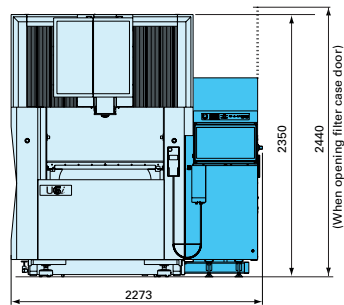
U3i



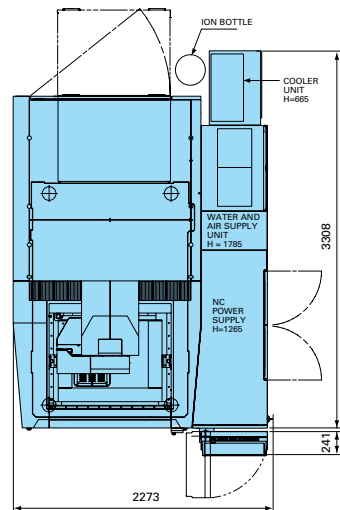
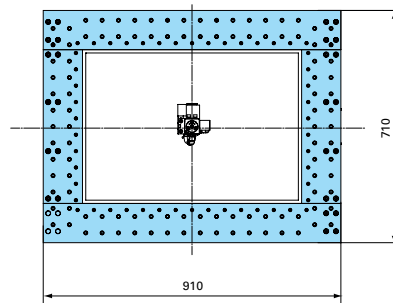
SQUARE SHAPE WORK TABLE



U6i



SQUARE SHAPE WORK TABLE





<http://www.makino.com.sg>



SKÄRPVERKTYG AB

📍 Kråketorpsgatan 10, 43153 MÖLNDAL

☎ 031-87 00 50

📠 Fax 031-87 14 15

✉ info@skarpverktyg.se

🌐 www.skarpverktyg.se

*The specifications in this catalog may be changed without prior notice to incorporate improvements resulting from ongoing R&D programs.

*The machines displayed in this catalog are fitted with optional equipment.

*This product, including technical data and software, may be subjected to the Singapore Foreign Exchange and Foreign Trade Law.

* Prior to any re-sale or re-export of controlled items, please contact Makino to obtain any required authorization or approval.